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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/580,401	CHEN ET AL.	
	Examiner	Art Unit	
	AWET HAILE	2474	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 February 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. **Claims 1-21** are pending on this application.

Response to Arguments

2. Applicant's arguments with respect to **claims 1-21** have been fully considered but they are not persuasive.

Regarding claim 1, the applicant argued that"…

I) Li does not disclose "*creating individual QoS resource list in each edge router*". … The QoS resource list is different from the edge router ID. The QoS resource list saves the resource information of the paths in the whole MPLS network, and includes the following field structure: egress edge router, service class, LSP resources, and available resources (Please refer to lines 7-12 and 17-18 in page 5 of the specification of the present invention)…" page 6 last paragraph.

II) Li does not disclose "updating the QoS resource list." In Li, the edge router only has a path function, that is, the edge router determines the resource allocation path and transmits the resource allocation message along the determined resource allocation path…. "updating the QoS resource list" may comprise "each edge router obtain[ing] the resource information of the path from the router to each of the other edge routers in the same domain, and save[ing] the resource

information in the QoS resource list" (Please refer to lines 4-6 in page 6 of the specification of the present invention)..." page 7 last paragraph, "... the edge router of claim l is not the equivalent to the edge router of Li. In Li, a policy server is introduced to cooperate with the edge router. Whereas, the edge router of claim l has a resource access function, and does not need a policy server..." page 8 paragraph 2.

In response to applicant's argument, examiner respectfully disagrees with the arguments above.

I) Li discloses, creating individual QoS resource list in each edge router (see paragraphs 172-177 and Figs. 4-5, i.e., each of the edge routers forming a quality of service edge router list, related to resources between source APP1 and destination APP2), thus Li discloses applicants argued limitation.

In response to applicant's argument that the reference fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., *"The QoS resource list saves the resource information of the paths in the whole MPLS network, and includes the following field structure: egress edge router, service class, LSP resources, and available resources..."*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Applicant does **not** specifically claimed (in claim 1) *"...The QoS resource list saves the resource information of*

the paths in the whole MPLS network, and includes the following field structure: egress edge router, service class, LSP resources, and available resources...".

II) Li discloses, updating the QoS resource list(see paragraphs 175-179 and Figs. 4-5, i.e., each of the edge nodes updating the quality of service edge router list, by adding/removing routing ID to the quality of service edge router list, related to resources between source APP1 and destination APP2).

Furthermore, it is noted that the applicant is arguing a broad limitation (i.e. *updating the QoS resource list*), however this limitation **does not exclude** an edge node updating the quality of service edge router list, by adding/removing routing ID to the quality of service edge router list, related to resources between source APP1 and destination APP2 as taught by Li, thus, when given the broadest reasonable interpretation on the claimed limitation of "*updating the QoS resource list*" in light of applicant's specification, Li's method of updating the quality of service edge router list, by adding/removing routing ID to the quality of service edge router list, related to resources between source APP1 and destination APP2, does in fact anticipate the argued limitation.

In response to applicant's argument that the reference fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "*...updating the QoS resource list" may comprise "each edge router obtain[ing] the resource information of the path from the router to each of the other edge routers in the same domain, and save[ing] the*

resource information in the QoS resource list..." and "Whereas, the edge router of claim l has a resource access function, and does not need a policy server" are not recited in the rejected claim(s*)*. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Applicant does **not** specifically claimed (in claim 1)"*updating the QoS resource list" may comprise "each edge router obtain[ing] the resource information of the path from the router to each of the other edge routers in the same domain, and save[ing] the resource information in the QoS resource list" and "Whereas, the edge router of claim l has a resource access function, and does not need a policy server".*

Regarding claim 6, the applicant argued that"…

I) Li only discloses "judging whether there are enough resources between the QOS edge router and the adjacent QOS edge router" (Please refer to page 3, paragraph 47 of Li). Li does not disclose how to judge whether there are enough resources in the path recorded in the QoS resource list..." page 12 paragraph 2.

II) "Remov[ing] the edge router list form said resource allocation message" is not equivalent to "updating said QoS resource list" in claim 6. QoS resource list comprises information of the egress edge router, service class, LSP resources and available resources, not only the edge router list. And updating said QoS resource list comprises "the bandwidth resources requested in the resource request are subtracted from the available resources of the

path in the QoS resource list" (Please refer to lines 15-16 in page 7 of the specification of the present invention) …"page 12 paragraph 4.

III) In Rabie, "the available bandwidth" is not recorded in the QoS resource list, instead, the available bandwidth is advertised to every other node (Please refer to page 3, paragraph 0039 of Rabie). And the advertised available link capacity is compared with actual link capacity (Please refer to page 3, paragraph 0037 of Rabie). So, it can be seen that "the available bandwidth" of Rabie is not equivalent to "available resources of the requested resource"…" page 13 paragraph 2.

In response to applicant's argument, examiner respectfully disagrees with the arguments above.

I) In response to applicant's argument above, the rejection is based upon a combined system of Li and Rabie. One must consider the combined system of Li and Rabie as a **whole,** rather than individually as incorrectly stated by applicant above. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, the Examiner has outlined how the combination of the references, when considered as a whole, read on the present claimed invention as follows:

Li discloses, a method for establishing a QoS data path in a MPLS network, including: a user terminal sending a QoS resource request to an ingress edge router *(See Page 3; Para. 0040, Li discloses about a source terminal transmitting a resource request message to the ingress edge router of the data flow to be transmitted)*; said edge router determining information of a path to an egress edge router of the QoS resource request *(See Page 3; Para. 0044, Li discloses that the QoS edge router which receives the resource allocation message from the source terminal, determines the resource allocation path according to the stored edge router list, transmits the resource allocation message for the data flow along the determined resource allocation path);* when the resource request is determined to be accessed, updating said QoS resource list *(See Page 3; Para. 0047 & 0049, if there are enough resources to be allocated, the edge router perform resource allocation, removing the edge router list from the resources allocation message)*.

Rabie discloses, said ingress edge router determining whether the resource request is accessed or rejected based on comparing available resources corresponding to the path of recorded in said QoS resource list with bandwidth requested in said resource request *(See Rabie; Page 3: Para. 0041, the service category requested can be supported by comparing the available bandwidth for the link/pool with the calculated reserved bandwidth.*

Thus, it is clear that the combination of Li and Rabie disclosed applicant's broadly claimed invention.

II) Li discloses, updating said QoS resource list(see paragraphs 175-179 and Figs. 4-5, i.e., each of the edge nodes updating the quality of service edge router list, by adding/removing routing ID to the quality of service edge router list, related to resources between source APP1 and destination APP2).

Furthermore, it is noted that the applicant is arguing a broad limitation (i.e. *updating said QoS resource list*), however this limitation **does not exclude** an edge node updating the quality of service edge router list, by adding/removing routing ID to the quality of service edge router list, related to resources between source APP1 and destination APP2 as taught by Li, thus, when given the broadest reasonable interpretation on the claimed limitation of "*updating said QoS resource list*" , Li's method of updating the quality of service edge router list, by adding/removing routing ID to the quality of service edge router list, related to resources between source APP1 and destination APP2, does in fact anticipate the argued limitation.

In response to applicant's argument that the reference fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "*...updating said QoS resource list comprises "the bandwidth resources requested in the resource request are subtracted from the available resources of the path in the QoS resource list ...*") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Applicant does **not** specifically claimed (in claim 6)" *updating said QoS resource list comprises "the bandwidth resources requested in the*

resource request are subtracted from the available resources of the path in the QoS resource list".

III) Rabie discloses, said ingress edge router determining whether the resource request is accessed or rejected based on comparing available resources corresponding to the path of recorded in said QoS resource list with bandwidth requested in said resource request (see paragraphs 37-41, i.e., determining whether the service category requested can be supported by comparing the available bandwidth for the link/pool with the calculated reserved bandwidth).

Furthermore, when given the broadest reasonable interpretation on the claimed limitation of "*ingress edge router determining whether the resource request is accessed or rejected based on comparing available resources corresponding to the path of recorded in said QoS resource list with bandwidth requested in said resource request'*" in light of applicant's own specification, Rabie 's method of "*comparing the available bandwidth for the link/pool with the calculated reserved bandwidth"* does in fact anticipate applicant's argued limitation.

Thus, it is clear that the combination of Li and Rabie disclosed applicant's broadly claimed invention.

Regarding claim 12, the applicant argued that"…

I) Li does not disclose the ingress edge router "modifying its QoS resource list" and does not disclose that the QoS resource list "records resource state corresponding to a path"..." page

15 paragraph 5. … specifically, modifying QoS resource list comprises "addling a corresponding amount to the available QoS resources corresponding to the egress edge router of the QoS data transmission path occupied by the user terminal in the QoS resource list" (Please refer to lines 2-4 in page 11 of the specification). Secondly, in Li, the QER list only records IDs of edge routers, whereas in claim 12, the QoS resource list records a resource state corresponding to a path..." page 15 paragraph 5.

In response to applicant's argument, examiner respectfully disagrees with the arguments above.

I) Li discloses, said ingress edge router modifying its QoS resource list which records resource state corresponding to a path (See Li Page 8; Para. 0172-0174, Li discloses if the resources are not enough, returning a request failure message; otherwise adding R1 ID in the QER list of the resource request message).

In response to applicant's argument that the reference fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., modifying QoS resource list comprises "***addling a corresponding amount to the available QoS resources corresponding to the egress edge router of the QoS data transmission path occupied by the user terminal in the QoS resource list***") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant does **not** specifically claimed (in claim 12)" ***addling a corresponding amount to the available QoS resources corresponding to the egress edge router of the QoS data transmission path occupied by the user terminal in the QoS resource list"*** .

Thus, it is clear that the combination of Li and Kurose disclosed applicant's broadly claimed invention.

Regarding dependent clams 2-5 and 8, the applicant argued that"…

I) Regarding claim 2, Li does not disclose "the resource states of the paths from the edge router to all the other edge routers in the same domain are recorded in said QoS resource list", page 8 last paragraph.

II) Regarding claim 3, Li does not disclose setting of LSP, which can realize the division of LSP to form the paths from each edge router to other edge routers in same domain. Secondly, with reference to page 2, paragraph 0029 of Li, only "establishing resource reservation path" is disclosed, but no "resource information of the path from the edge router to each of the other edge routers in the same domain" is disclosed…" page 9 paragraph 4.

III) Regarding claim 4, Matsubara does not disclose "modifying the available information of the requested resources in said QoS resource list." Thus, the above additional technical features are not disclosed in Matsubara..." page 17 paragraph 3.

IV) Regarding claim 5, Li does not disclose that the "state information" comprises "information of the egress edge router, service class, LSP resources and available resources"…" page 10 paragraph 2.

V) Regarding claim 8, Matsubara does not disclose "QoS Resource list" and "comparing available resources of the requested resources in said QoS resource list with bandwidth resources requested in said resource request", that is, Matsubara does not disclose how to determine if the path has the resource needed to match that of the request. Thus, Matsubara does not disclose the above additional technical features…" page10 paragraph 2.

In response to applicant's argument, examiner respectfully disagrees with the arguments above.

I) Li teaches, the resource states of the paths from the edge router to all the other edge routers in the same domain are recorded in said QoS resource list (see paragraphs 172-177 and Figs. 4-5, i.e., each of the edge routers forming a quality of service edge router list, related to resources between source APP1 and destination APP2 paths), thus Li discloses applicants argued limitation.

II) In response to applicant's argument that the reference fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., " *Li does not disclose setting of LSP,* ***which can realize the division of LSP to form the paths from each edge***

router to other edge routers in same domain ") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Applicant does **not** specifically claimed (in claim 3)" ***which can realize the division of LSP to form the paths from each edge router to other edge routers in same domain***".

Furthermore, **Li** teaches, resource information of the path from the edge router to each of the other edge routers in the same domain (see paragraphs 172, 177-179 and Figs. 4, 5, i.e., obtaining quality of service edge router list of edge routers in same domain to determine available resources).

III) Matsubara discloses, modifying the available information of the requested resources in said QoS resource list (see column 11 lines 25 - 43, i.e., the last-hop node crating table an sending an acknowledgment message), thus, it is clear that Matsubara teaches applicant's argued limitation.

IV) Li discloses, said QoS resource list at least includes information of the egress edge router(see paragraphs 175-177 and Figs. 4-5, i.e., quality of service edge router list comprising information related to egress routers 2 and 4), service class(see 93-96 i.e., each edge node treating each data flow/ path according to it's assigned class of services), LSP resources (see paragraphs 175-177 and Figs. 4-5, i.e., quality of service edge router list comprising information related to edge routers from source APP1 to APP2) and available resources (see paragraphs 175-

177 and Figs. 4-5, i.e., quality of service edge router list comprising information related to resources between each of the edge routers), thus, it is clear that Li teaches, applicant's argued limitations.

V) Matsubara discloses, comparing available resources of the requested resources in said QoS resource list with bandwidth resources requested in said resource request (see column 7 and Fig. 5, i.e., comparing requested resource with available resources); if said available resources are less than said bandwidth resources, sending a message of rejecting access to said user terminal, otherwise allowing said user terminal to access (see column 7 and Fig. 5, i.e., comparing requested resource with available resources and if sufficient resources are available approving a network user request of Qos path), thus, it is clear that Matsubara teaches, applicant's argued limitations.

Regarding dependent claims, 7, 10, 11, 13-15, 17, 18, 20 and 21, the applicant argues these claims conditionally on that of their parent independent claims.

Applicant's arguments are unpersuasive and, therefore, the rejections of these claims are hereby maintained.

Claim Rejection – 35 USC§ 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1-3, 5, 16-18 and 20-21** are rejected under 35 U.S.C. 102(e) as being anticipated by Li et al (hereinafter referred as Li '119) US Publication No. 2006/0182119 A1.

Regarding claim 1, Li '119 discloses, a method for realizing QoS guarantee in a MPLS network having a number of edge routers(see Figs. 3-4, and paragraphs 99, 170-172, i.e. Edge routers R1-R4) comprising: creating an individual QoS resource list in each edge router to record resource state corresponding to a path (see paragraphs 40-44, 172-177 and Figs. 4-5, i.e., each of the edge routers forming a quality of service edge router list, related to resources between source APP1 and destination APP2);

each edge router assigning resources to a user terminal which makes a request based on said QoS resource list and updating the QoS resource list (see Paragraphs 40-46, 172-176 and Figs. 4-5, i.e., each of the edge nodes updating the quality of service edge router list, by adding/removing routing ID to the quality of service edge router list, related to resources between source APP1 and destination APP2).

Regarding claim 2, Li '119 discloses, a method characterized in that the resource states of the paths from the edge router to all the other edge routers in the same domain are recorded in said QoS resource list (see paragraphs 100, 172-177 and Figs. 4-5, i.e., each of the edge routers

forming a quality of service edge router list, related to resources between source APP1 and destination APP2 paths).

Regarding claim 3, Li '119 discloses, a method characterized in that the step of creating a QoS resource list further comprises pre-configuring LSPs based on service class to set different LSPs for different service classes (see paragraphs 10, 172, 177-179 and Figs. 4, 5, i.e., obtaining quality of service edge router list of edge routers in same domain to determine available resources); said edge router obtaining resource information of the path from the edge router to each of the other edge routers in the same domain based on LSP resource state information and route information of said MPLS network, and saving the resource information in the QoS resource list(see paragraphs 29, 175-179 and Figs. 4-5, i.e., each of the edge nodes adding updating the quality of service edge routers list and forwarding a service request based on the routers list).

Regarding claim 5, Li '119 discloses, said QoS resource list at least includes information of the egress edge router(see paragraphs 175-177 and Figs. 4-5, i.e., quality of service edge router list comprising information related to egress routers 2 and 4), service class(see 93-96 i.e., each edge node treating each data flow/ path according to it's assigned class of services), LSP resources (see paragraphs 172-177 and Figs. 4-5, i.e., quality of service edge router list comprising information related to edge routers from source APP1 to APP2) and available resources (see paragraphs 175-177 and Figs. 4-5, i.e., quality of service edge router list comprising information related to resources between each of the edge routers).

Regarding claim 16, Li '119 discloses, an edge router for a MPLS network(see Figs. 3-4, and paragraphs 99, 170-172, i.e. Edge routers R1-R4), comprising: a QoS resource list for recording a number of resource states corresponding to a number of paths(see paragraphs 40-44, 172-177 and Figs. 4-5, i.e., each of the edge routers forming a quality of service edge router list, related to resources between source APP1 and destination APP2);

and an access and resource control unit for accessing or rejecting a resource request from a user terminal based on information recorded in the QoS resource list and updating said QoS resource list(see Paragraphs 40-46, 172-176 and Figs. 4-5, i.e., each of the edge nodes updating the quality of service edge router list, by adding/removing routing ID to the quality of service edge router list, related to resources between source APP1 and destination APP2, Li also teaches an edge node rejecting resource requests based on the quality of service edge router list).

Regarding claim 17, Li '119 discloses, resource states of the paths from the edge router to all the other edge routers in the same domain are recorded in said QoS resource list (see paragraphs 100, 172-177 and Figs. 4-5, i.e., each of the edge routers forming a quality of service edge router list, related to resources between source APP1 and destination APP2 paths).

Regarding claim 18, Li '119 discloses, a method further including a route list and a MPLS list based on which said QoS resource list is created and corresponds to LSP resource state of the MPLS network (see paragraph 179 and Figs.4-5, i.e. creating a routing list in an MPLS network).

Regarding claim 20, Li '119 discloses, said QoS resource list at least includes information of an egress edge router(see paragraphs 175-177 and Figs. 4-5, i.e., quality of service edge router list comprising information related to egress routers 2 and 4), service class(see 93-96 i.e., each edge node treating each data flow/ path according to it's assigned class of services), LSP resources (see paragraphs 172-177 and Figs. 4-5, i.e., quality of service edge router list comprising information related to edge routers from source APP1 to APP2) and available resources (see paragraphs 175-177 and Figs. 4-5, i.e., quality of service edge router list comprising information related to resources between each of the edge routers).

Regarding claim 21, Li '119 discloses, A MPLS network for realizing QOS guarantee(see paragraphs 99, 170-175, i.e. MPLS network with a Qos is disclosed) , comprising an edge router for a MPLS network(see Figs. 3-4, and paragraphs 99, 170-172 and Fig. 4-5, i.e. Edge routers R1-R4), comprising: a QoS resource list for recording a number of resource states corresponding to a number of paths(see paragraphs 40-44, 172-177 and Figs. 4-5, i.e., each of the edge routers forming a quality of service edge router list, related to resources between source APP1 and destination APP2);

and an access and resource control unit for accessing or rejecting a resource request from a user terminal based on information recorded in the QoS resource list and updating said QoS resource list(see Paragraphs 40-46, 172-176 and Figs. 4-5, i.e., each of the edge nodes updating the quality of service edge router list, by adding/removing routing ID to the quality of service

edge router list, related to resources between source APP1 and destination APP2, Li also teaches an edge node rejecting resource requests based on the quality of service edge router list).

Claim Rejections – 35 USC§ 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. **Claims 6, 7, 10 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Li '119 in view of Rabie et al (hereinafter referred as Rabie '829) US Publication No. 2003/0076829 A1.

Regarding claim 6, Li '119 discloses, a method for establishing a QoS data path in a MPLS network, including: a user terminal sending a QoS resource request to an ingress edge router (see paragraphs 40, 170-172 and Figs. 4-5, i.e. a resource terminal transmitting a source request to an edge node);

said edge router determining information of a path to an egress edge router of the QoS resource request (see paragraphs 44, 172-175 and Figs. 4-5, i.e., an edge router which receives the resource allocation message from the source terminal, determines the resource allocation path according to the stored edge router list, transmits the resource allocation message for the data flow along the determined resource allocation path); when the resource request is determined to be accessed, updating said QoS resource list(see paragraphs 47-49, 175-179 and Figs. 4-5, i.e., if there are enough resources to be allocated, the edge router perform resource allocation, and each of the edge nodes updating the quality of service edge router list, by adding/removing routing ID to the quality of service edge router list, related to resources between source APP1 and destination APP2).

Li '119 is silent on, said ingress edge router determining whether the resource request is accessed or rejected based on comparing available resources corresponding to the path of recorded in said QoS resource list with bandwidth requested in said resource request.

Rabie '829, discloses said ingress edge router determining whether the resource request is accessed or rejected based on comparing available resources corresponding to the path of recorded in said QoS resource list with bandwidth requested in said resource request (see paragraphs 37-41, i.e., determining whether the service category requested can be supported by comparing the available bandwidth for the link/pool with the calculated reserved bandwidth).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate, the method of determining whether the resource request is allowed based on comparison of available bandwidth with the resource request as taught by Rabie '829, into the communication system of Li '119, in order to result in an optimal route through the network that satisfies the bandwidth requirement, as suggested by Rabie '829 (see paragraph 39).

Regarding claim 7, Li '119 discloses, a method characterized in that the resource states of the paths from the edge router to all the other edge routers in the same domain are recorded in said QoS resource list (see paragraphs 100 and 170-174, i.e., the quality of service routers list including list of resource between edger routers in same domain).

Regarding claim 10, Li '119 discloses, the step of updating the QoS resource list further includes: subtracting the bandwidth resources requested in said QoS resource request from the available resources of the corresponding requested resources in said QoS resource list (see paragraphs 49, 172-179, i.e., a method of updating the bandwidth allocated to each of the sources is disclosed).

Regarding claim 11, Li '119 discloses, said QoS resource list at least includes information of the egress edge router(see paragraphs 175-177 and Figs. 4-5, i.e., quality of service edge router list comprising information related to egress routers 2 and 4), service class(see 93-96 i.e., each edge node treating each data flow/ path according to it's assigned class of

services), LSP resources (see paragraphs 172-177 and Figs. 4-5, i.e., quality of service edge router list comprising information related to edge routers from source APP1 to APP2) and available resources (see paragraphs 175-177 and Figs. 4-5, i.e., quality of service edge router list comprising information related to resources between each of the edge routers).

8. **Claims 12-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurose et al. (hereinafter referred as Kurose '089) US Publication No. 2003/0084089 A1 in view of Li '119.

Regarding claim 12, Kurose '089 discloses, a method for terminating QoS data transmission in a MPLS network, including: an ingress edge router receiving a resource releasing request from a user terminal (see Fig.1 and paragraph 91-93, i.e., the user terminal transmit a request to the ingress router to request a communication resource resservbility); said ingress edge router releasing the resources occupied by said user terminal (see paragraph 141, when it's determined that the data are the resource release requests, the edge router releases the communication resource of the ingress router).

Kurose '089 is silent on, said ingress edge router modifying its QoS resource list which records resource state corresponding to a path.

Li '119 teaches, said ingress edge router modifying its QoS resource list which records resource state corresponding to a path (see paragraphs 172-174, i.e., if the resources are not

enough, returning a request failure message; otherwise adding R1 ID in the QER list of the resource request message).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate, the method of modifying an Qos resources list as taught by Li '119, into the communication system of Kurose '089, in order to reduce flow state information maintained at the network nodes as well as overhead of signaling processing and storage at the network nodes, as suggested by Li '119 (see abstract).

Regarding claim 13, Kurose '089 is silent on, a method characterized in that the resource states of the paths from the edge router to all the other edge routers in same domain are recorded in said QoS resource list.

Li '119 teaches, a method characterized in that the resource states of the paths from the edge router to all the other edge routers in same domain are recorded in said QoS resource list (see paragraphs 29, 100 and 170-174, i.e., the quality of service routers list including list of resource between edger routers in same domain).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate, the method of quality of service routers list including list of resource between edger routers in same domain as taught by Li '119, into the communication system of Kurose '089, in order to reduce flow state information maintained at the network

nodes as well as overhead of signaling processing and storage at the network nodes, as suggested by Li '119 (see abstract).

Regarding claim 14, Kurose '089 is silent on, a method characterized in that the step of modifying the QoS resource list further includes: adding corresponding amount to available QoS resources corresponding to an egress edge router of said QoS data transmission in the QoS resource list.

Li '119 teaches, a method characterized in that the step of modifying the QoS resource list further includes: adding corresponding amount to available QoS resources corresponding to an egress edge router of said QoS data transmission in the QoS resource list (see paragraphs 100, 172-177 and Figs. 4-5, i.e., each of the edge routers forming a quality of service edge router list, related to resources between source APP1 and destination APP2 paths).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate, the method of edge routers forming a quality of service edge router list, related to resources between source APP1 and destination APP2 paths as taught by Li '119, into the communication system of Kurose '089, in order to reduce flow state information maintained at the network nodes as well as overhead of signaling processing and storage at the network nodes, as suggested by Li '119 (see abstract).

Regarding claim 15, Kurose '089 is silent on; a method characterized in that said QoS resource list at least includes information of the egress edge router, service class, LSP resources and available resources.

Li '119 teaches, said QoS resource list at least includes information of the egress edge router(see paragraphs 175-177 and Figs. 4-5, i.e., quality of service edge router list comprising information related to egress routers 2 and 4), service class(see 93-96 i.e., each edge node treating each data flow/ path according to it's assigned class of services), LSP resources (see paragraphs 172-177 and Figs. 4-5, i.e., quality of service edge router list comprising information related to edge routers from source APP1 to APP2) and available resources (see paragraphs 175-177 and Figs. 4-5, i.e., quality of service edge router list comprising information related to resources between each of the edge routers).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate, the method of creating QoS resource list at least including information of the egress edge router, service class, LSP resources and available resources as taught by Li '119, into the communication system of Kurose '089, in order to reduce flow state information maintained at the network nodes as well as overhead of signaling processing and storage at the network nodes, as suggested by Li '119 (see abstract).

9. **Claims 4 and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Li '119 in view of Matsubara et al (hereinafter referred as Matsubara '640) US Patent No. 7, 215, 640 B.

Regarding claim 4, Li '119 discloses, edge router receiving a resource request from the user terminal (see paragraph 40, 170-172 and Fig. 4-5), edge router searching said QoS resource list for available information of the requested resources based on an egress edge router in said resource request (see paragraphs 175-177 and Figs. 4-5, i.e., the edge node checking the quality of service routers list to determine forwarding path)

Li '119 is silent on, said edge router determining whether the resource request is accessed or rejected based on the available information of said requested resources when the resource request is determined to be accessed, modifying the available information of the requested resources in said QoS resource list and sending an acknowledgement message to said user terminal.

Matsubara '640 teaches, said edge router determining whether the resource request is accessed or rejected based on the available information of said requested resources (See Matsubara Col 6; lines 53-63); when the resource request is determined to be accessed, modifying the available information of the requested resources in said QoS resource list and sending an acknowledgement message to said user terminal (See Matsubara Col 11; lines 30-33).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate, the method of determining whether the resource request is accessed or rejected based on the available information of said requested resources as taught by

Matsubara '640 into the communion system of Li '119, in order to reduces network storage capacity requirements and computational load as compared to a conventional pre-set path system, as suggested by Matsubara '640(see abstract).

Regarding claim 19, Li '119 discloses, a data transmission unit which, under the control of said access and resource control unit, performs operations such as classifying(see 93-96 i.e., each edge node treating each data flow/ path according to it's assigned class of services), marking (see 93-96 i.e., each edge node updating the resource list)

Li '119 silent on, queuing and scheduling on data transmitted by the user terminal.

Matsubara '640 teaches, queuing and scheduling on data transmitted by the user terminal (see column 11 and Fig 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate, the method of queuing and scheduling on data transmitted by the user terminal as taught by Matsubara '640 into the communion system of Li '119, in order to reduces network storage capacity requirements and computational load as compared to a conventional pre-set path system, as suggested by Matsubara '640(see abstract).

10. **Claims 8 and 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Li '119 in view of Rabie '829 and Matsubara '640.

Regarding claim 8, Li '119 and Rabie '829 are silent on, comparing available resources of the requested resources in said QoS resource list with bandwidth resources requested in said resource request; if said available resources are less than said bandwidth resources, sending a message of rejecting access to said user terminal, otherwise allowing said user terminal to access.

Matsubara '640 discloses, comparing available resources of the requested resources in said QoS resource list with bandwidth resources requested in said resource request (See Matsubara Col 6; lines 64-67); if said available resources are less than said bandwidth resources, sending a message of rejecting access to said user terminal, otherwise allowing said user terminal to access (See Matsubara Col 7; lines 15-21).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate, the method of comparing available resources of the requested resources in a QoS resource list with bandwidth resources requested in resource request as taught by Matsubara '640, into the communication method of Li '119, in order to reduces network storage capacity requirements and computational load as compared to a conventional pre-set path system, as suggested by Matsubara '640(see abstract).

Regarding claim 9, Li '119 discloses,: when the resource request is not cross-domain, said edge router sending the resource request to a destination user terminal in said resource request and waiting for an acknowledgement message from the destination user terminal (see paragraph 0178); when the resource request is cross-domain, said edge router searching for a

domain which is close to the destination user terminal in said resource request and has available resources larger than said bandwidth resources, sending the resource request to an edge router of the domain and waiting for an acknowledgement message from the edge router of the domain (see paragraphs 175-179 and Figs, 4-5).

Li '119 and Rabie '829 are silent on, after receiving the acknowledgement message, said edge router sending the acknowledgement message to said user terminal; and after receiving the acknowledgement message, said user terminal starts the data transmission.

Matsubara '640 teaches, after receiving the acknowledgement message, said edge router sending the acknowledgement message to said user terminal; and after receiving the acknowledgement message, said user terminal starts the data transmission(see Matsubara Col 11; lines 30-33).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate, the method of comparing available resources of the requested resources in a QoS resource list with bandwidth resources requested in resource request as taught by Matsubara '640, into the communication method of Li '119, in order to reduces network storage capacity requirements and computational load as compared to a conventional pre-set path system, as suggested by Matsubara '640(see abstract).

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, Masuda et al(US 2002/0059432 A1) and Matsubara et al(US 2004/0202159 A1) are recited to show method of providing quality of service in an MPLS network.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AWET HAILE whose telephone number is (571)270-3114. The examiner can normally be reached on Monday through Friday 8:30 AM - 4:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe can be reached on (571)272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/AWET HAILE/
Examiner, Art Unit 2474